Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Continental Resources, Inc.
Well Name/Number: Gilman 1-28H
Location: NE NW Section 28 T23N R54E ____
County: Richland **, MT; Field (or Wildcat)** W/C (Bakken Horizontal)

Air Quality

(possible concerns)
Long drilling time: No, 20 to 25 days drilling time.
Unusually deep drilling (high horsepower rig): No, triple derrick rig to drill a single lateral horizontal Bakken Formation test, 19,923MD/9,660'TVD.
Possible H2S gas production: Slight chance H2S gas from Mississippian Formations.
In/near Class I air quality area: no, nearest Class I air quality area is the Fort Peck Indian Reservation, about 35 miles to the northwest from this location.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
_X Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____

Comments: No special concerns – using triple rig to drill a single lateral horizontal Bakken Formation test. If there is an existing gathering system for natural gas in the area, then associated gas can be gathered or if no gathering system nearby gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)
Salt/oil based mud: Yes to intermediate casing string hole to be drilled with oil based invert drilling fluids (oil/water ratio of 70/30 to 80/20). Horizontal lateral will be drilled with brine water. Surface casing hole will use freshwater and freshwater mud system (Rule 36.22.1001).
High water table: No high water table anticipated at this location.
Surface drainage leads to live water: No.
Water well contamination: No. no water wells in sec 28. Surface hole will be drilled with freshwater and freshwater mud system, Rule 36.22.1001. Surface casing will be set at 1920' and cemented to surface.
Porous/permeable soils: No, silty sandy clay soils.
Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:
__ Lined reserve pit
_X Adequate surface casing
__ Berms/dykes, re-routed drainage
X Closed mud system
X Off-site disposal of **liquids (in approved facility)**
X Other: Lined cuttings pit (16 mil liner) will be used since this is a closed loop mud system to be employed. Cuttings will be buried on the wellsite.

Comments: 1920' of surface casing enough to cover the base of the Fox Hills and cemented to surface adequate to protect freshwater zones, Rule 36.22.1001.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None will be crossed.
High erosion potential: Not likely. The location will require about 12' cut and 10' fill
Loss of soil productivity: No, location will be restored after drilling if unproductive. If productive, unused portion of this drilling location will be restored.
Unusually large wellsite: No -400'X450' location size required.
Damage to improvements: Slight, surface use is appears to be grazing land.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
X Stockpile topsoil
__ Stream Crossing Permit (other agency review)
X Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
__ Other _____

Comments: Access will be over existing county road #319. About a mile and a quarter of new access road will be built into this location from an existing county road. Cuttings will be buried in the lined cuttings pit. Oil based drilling fluids will be recycled. Reserve pit fluids will be hauled to a commercial disposal. Pit will be allowed to dry and then closed by filling and mixing with clay subsoils. No special concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Closest residence is a mile from this location. Enid, Montana is about 2.5 miles to the south of this location.
Possibility of H2S: Slight chance of H2S from Mississippian Formations.
Size of rig/length of drilling time: Triple drilling rig/short, 20 to 25 days drilling time.

Mitigation:
_X_ Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Adequate surface casing cemented to surface with an operational BOP stack (annular and double ram (pipe and blinds) rated for 5,000 psig) should mitigate any problems, Rule 36.22.1014.

Wildlife/recreation

(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): Fox Lake Game Management Area, about 7+ miles to the south east.
Proximity to recreation sites: Fox Lake Game Management Area, about 7 miles to the south east.
Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No
Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Least Tern, Whooping Crane and Piping Plover. Candidate specie is the Sprague's Pipit and the Greater Sage Grouse. NH tracker website indicate zero (0) species of concern in this township and range.

Mitigation:
__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies BLM, DSL)
__ Screening/fencing of pits, drillsite
__ Other: _____
Comments: Private prairie grassland. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern are discovered at this location. No concerns.

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites: None identified.
Mitigation
__ avoidance (topographic tolerance, location exception)
__ other agency review (SHPO, DSL, federal agencies BLM)
__ Other:_____
Comments: Private prairie grassland. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite.

Social/Economic

(possible concerns)
__ Substantial effect on tax base
__ Create demand for new governmental services
__ Population increase or relocation
Comments: Wildcat well. No concerns

_____
_____

Remarks or Special Concerns for this site

Continental will drill a single lateral Bakken Formation horizontal well test, No special concerns.

Summary: Evaluation of Impacts and Cumulative effects

No significant long term impacts expected, some short term impacts will occur.

_____

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the

human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/ Thomas Richmond _____
(title:) Administrator
Date: September 20, 2013

Other Persons Contacted:

_____
Montana Bureau of Mines and Geology, GWIC website _____
(Name and Agency)
Water wells in Richland County _____
(subject discussed)
September 20, 2013

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Richland County
(subject discussed)

9-3-2013 (for nearby well) _____
(date)

Montana Natural Heritage Program Website
(Name and Agency)
Heritage State Rank= S1, S2, S3 T23N R54E
(subject discussed)

September 3, 2013 (for nearby well) _____
(date)

Montana Cadastral Website
(Name and Agency)
Surface Ownership and surface use Section 30 T23N R54E
(subject discussed)

September 20, 2013

_____
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection: _____